SECTION 10

10.03 PRELIMINARY INVESTIGATION:

If the Distributor is allowed by Denver Water to conduct its own preliminary investigation, these requirements must be met:

A. Subsoil Investigation: A subsoil investigation shall be performed by a geotechnical engineer from exploratory holes dug to determine the bearing capacity and backfill suitability of the soil, presence of groundwater or bedrock, and any other condition which may affect the construction of the pipeline. Test holes shall be dug with a maximum spacing of 750 feet and at railroad, highway, and river crossings.

B. Alignment: A stationed alignment of the proposed Conduit is required to define the route with lines, angles, and curvatures referenced to land corners and other official survey control points when available. No negative stationing is allowed. The angle points, curve points and the centerline at a minimum spacing of 100 feet shall be marked on the ground, with an accuracy of at least one part in 5,000 which shall be checked by Denver Water prior to acceptance of the survey work.

   All points of intersection (PI's), points of curvature (PC's), points of tangency (PT's), angle points (AP's) and any points on the tangent (POT's) needed for intervisability shall be marked with semi-permanent steel pins in the ground such as concrete reinforcing bars, P-K nails or survey spikes.

C. Profile: A ground surface profile of the alignment in National Geodetic Survey datum tied to official survey bench marks is required. Additional semi-permanent bench marks shall be established every 1,500 feet by closed loops of Third-Order accuracy. The profile shall consist of ground surface elevations along the proposed Conduit centerline at every 100-foot station and at grade breaks. All level loop and profile data shall be recorded in field books.

D. Topographical Features: Topographical features within the street or right-of-way and any topographic feature outside the right-of-way which may interfere with the operation or installation of the Conduit shall be accurately shown in field books by both note and drawing. Topographic features may also be compiled by aerial photogrammetry methods.

E. Cross-Sections: In areas where the ground slope perpendicular to the centerline of the Conduit exceeds 5 percent, cross sections shall be taken at all profile points and shall extend at least 25 feet to each side of the centerline. All cross section data shall be entered into field books.

F. Utilities: All utility crossings or close utility interference shall be exposed by digging test pits. Field books shall be used to record the size, nature, and location of the interference by station offset and elevation.

G. Field Book: All survey data compiled in the determination of the route location, the extent of the interference, the centerline profile, the cross sections and level loops shall be entered into field books provided by Denver Water and submitted with the plans and specifications.